JOINT COUNCIL ON FOOD AND AGRICULTURAL SCIENCES

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U.S. Department of Agriculture
Washington, D.C. 20250

PROCEEDINGS OF THE JOINT COUNCIL ON FOOD AND AGRICULTURAL SCIENCES MEETING, JANUARY 13-15, 1982 WASHINGTON, D.C.

Joint Council Members and Alternates:

James H. Anderson, Cochairman
Anson R. Bertrand, Cochairman
Robert E. Buckman
Kenneth J. Carpenter
Denzil Clegg
John L. Gerwig
Allan D. Goecker
Mary Nell Greenwood
Sumner Griffin
T. E. Hartung
R. J. Hildreth
Dawson Johns
Terry B. Kinney, Jr.
Harold F. Robinson
Keith Shea
Richard A. Skok
A. I. Thomas
W. I. Thomas
Samuel Waters
John G. Stovall, Executive Director
Susan G. Schram, Executive Secretary

Regional Council Representatives:

H C Cox, Chairman, Western Regional Council

National Extension Committee Members:

L. F. Amburn, Chairman, National Extension Committee (NEC)
John Campbell, University of Illinois
Leigh Hammond, North Carolina Utilities Commission
Marianne Houston, National Extension Advisory Council
William R. Johnson, Stephen F. Austin State University
Frances McConnell, National Extension Advisory Council

National Extension Committee Members:

Daniel Pfannstiel, Texas A&M University
James Summers, West Virginia University
Lowell Watts, Colorado State University
Henry Webster, Department of Natural Resources, State of Michigan

Speakers:

Robert Kramer, Kellogg Foundation
Dan E. Moore, The Pennsylvania State University
Richard Lyng, Deputy Secretary of Agriculture

Others Present:

Tom Adams, House Agriculture Committee Staff
Ray Altevogt
Tom Army, USDA/S&E
Robert Ayling, USDA/OICD
Charles Beer, USDA/S&E
Claude Bennett, USDA/S&E
Jean Lipman-Blumen, Center for Policy Research
Mike Brazzel, USDA/S&E
Howard Brooks, USDA/S&E
Mark Buchanan, Western Director-at-Large, State Agr'l. Exper. Stations
Gary Crawford, USDA/S&E
E. L. Corley, USDA/S&E
Bob Eddleman, IR-6, Mississippi State University
Gary Evans, USDA/S&E
Klaus Flach, USDA/SCS
Barbara Fontana, USDA/S&E
Kennan Garvey, USDA/OBPA
Bruce Greenshields, USDA/ERS

Others Present:

Jim Hall, USDA/S&E
Patricia A. Madson, USDA/S&E
Robert Marshak, USDA/S&E
James Nielson, BIFAD/AID
Wallace Olsen, USDA/S&E
Maureen Quinn, USDA/S&E
Steve Rawlins, USDA/S&E
Helen Roberts, Association of American State Colleges and Universities
Jane Roth, USDA/S&E
Alice Skelsey, USDA/S&E
Jim Smith, USDA/S&E
Georgia Strasburg, Center for Policy Research
Larry V. Summers, USDA/S&E
Tom Tate, USDA/S&E
John Victor, USDA/S&E
Eldon Weeks, USDA/S&E

1. Presiding Cochairmen: James H. Anderson and Anson R. Bertrand.

2. The Proceedings of the October 14-16, 1981, meeting of the Joint Council were approved.

3. Updates: Executive Director

- John Stovall discussed changes in the 1981 Farm Bill pertaining to the Joint Council:

  - Reports: Priorities report (each year by June 30, specifying levels of support needed to carry out programs); annual accomplishments report (November 30 each year); five-year plan (every two years beginning June 30, 1983).

  - Membership: At least 25 members; 50 percent land-grant representatives; two members from other colleges and universities; staggered appointment terms; members appointed by the Secretary from nominees made by designated organizations.

  - Term of Joint Council: Through September 30, 1985.

  - Federal Advisory Committee Act: Joint Council is exempt from this act.

  - Purpose: Joint Council plays stronger role in Federal budget development process; Joint Council is to "bring about" more effective research, extension, and teaching rather than simply to "foster coordination" (1977 language).

  - Staff: Authorizes full-time staff to support Joint Council/Users Advisory Board functions and authorizes separate appropriations for that purpose.

- The 1981 Joint Council Annual Report is complete and will be distributed to Council members with the Joint Council Proceedings.

4. Executive Committee Report

Cochairman Anderson reported that the Executive Committee met December 16, 1981, and January 13, 1982. Discussion items included:

a. Report of the 1982 Agenda Committee

- The Executive Committee received and accepted the report of the Agenda Committee at its December meeting. It will be reviewed by R.J. Hildreth during this session.

b. Needs Assessment/Strategic Plan

- In December, the Executive Committee discussed at length the needs assessment and five-year plan required by 1981 Farm Bill legislation.

- Bob Buckman and a staff work group will review proposed plans for these reports during this session and decisions will be made regarding the process for implementing the congressional charge.

c. Joint Meeting with National Extension Committee

- The Executive Committee met jointly with the National Extension Committee (NEC) this morning to discuss topics of mutual concern. Bud Amburn, NEC chairman, will report on this session.

5. Report from the National Extension Committee

- Bud Amburn, chairman of the National Extension Committee, reported progress of the NEC since its inception and discussed the joint meeting held with the Executive Committee earlier in the day.

- Amburn recognized the need for additional coordination among extension, teaching, and research amidst shrinking budgets and cited the NEC's desire to promote the importance of extension's mission.

- Amburn highlighted priority areas for NEC attention in the past year:

  a. Computer utilization - potential for research-extension linkages, the need for national coordination, cooperation with the ECOP task force on computers.

  b. Research-extension linkages - the relationship between extension programming and the research base from which it draws.

  c. Energy - the increasing need for innovative extension energy programs in light of the contemporary energy situation.

6. Technology Transfer in Agriculture

- Cochairman Bertrand reviewed objectives for this session: to review ongoing efforts to improve the technology transfer process in food and agriculture; to explore the role of computer technology in speeding the dissemination of information; to identify opportunities for the Joint Council to help improve/enhance technology transfer.

a. The Computer Revolution in Agriculture - Robert Kramer, Program Director, W.K. Kellogg Foundation

Highlights

- The Kellogg Foundation is interested in funding unique projects to which universities will contribute and which will be taken over by the university when Kellogg funding expires.

- The Kellogg Foundation wishes to help institutions develop and deliver agricultural computer programs in this decade.

- Farmers, feed companies, farm management associations, banks, and governmental agencies are all increasing the use of computers. In a recent survey of Indiana farmers, 13 percent presently own an on-farm computer and the growth rate of on-farm computers is accelerating each year.

- Everything possible must be done to insure that students in agriculture-related curriculums have computer skills.

- Kramer predicted the following scenario for 1990: three-fourths of all mid-size farms in the U.S. will utilize computer software in making management decisions and most will have their own computers; 90 percent of county extension offices will have an intelligent computer and an extension agent who is a computer expert; computer experts will be employed at the district and State levels; on-campus interdisciplinary computer coordination will increase; U.S. agriculture will be the top industry in the U.S. where end-users (farmers) have a great knowledge of computers; computer marketing will be commonplace.

- At the regional and national levels in 1990: each of the four geographic regions will have an agricultural computer center representing teaching, research, and extension; regional sharing of software will be commonplace; the USDA will have one effective computer committee that will span USDA agencies and other departments; there will be a national inventory of agricultural software in an on-line, interactive retrieval service; a national computer center will be located on the campus of a land-grant university.

- Recently, Kellogg has helped fund administrative meetings for learning about computers; nine State projects; regional feasibility studies in the North Central and Northeast regions; the North Central Computer Institute; the Indiana Farmer Survey (Purdue) and two computer dissemination conferences (Purdue).

- Kellogg expects to do the following: fund a regional feasibility study in the West, maybe the South; fund regional computer institutes or centers in the South, Northeast, and West; fund eight to 10 more State projects; fund a National Computer Center; fund computer workshops and conferences in each State to share the experiences learned; provide funds for speakers at regional meetings--Northeast.

- The Joint Council and its National Extension Committee should: encourage the coordination of the vast amount of computer work going on in the USDA; support the National Computer Committee of ECOP and help implement their recommendations; persuade Congress to provide funds to the USDA and State extension services and experiment stations for computer equipment, personnel, and training programs for farmers and other extension clientele.

- These are difficult times and U.S. farmers need computer applications so they can become better managers and continue U.S. agriculture to be the most efficient and productive industry in the United States.

b. Extension Perspectives on Technology Transfer - Denzil Clegg, Associate Administrator, Extension Service

Highlights

- From extension's perspective, computer programs need to be based on the needs of clientele. Technology transfer is a "buzz word" that incorporates many extension activities.

- The ECOP computer task force met November 11-12, 1981, and identified needs and action items: (1) help from the national level in assessing the national data base; (2) policies to facilitate coordination between States; (3) an on-line software library; (4) region-to-region coordination; (5) statements of missions and goals; (6) means for idea exchange; (7) staff development; (8) hardware evaluation, documentation; (9) legal consultation; (10) relationships with the commercial sector. A working task force will follow through with these action items.

- The North Central Regional Computer Institute is functioning well. Its objectives are to facilitate: development of multi-State software; inter-institutional sharing of software; dissemination of regional data bases; training of teaching, research, and extension personnel; consultation on technical products, services, and applications; legal support.

- Clegg distributed and briefly reviewed the following materials: (1) Inventory of Electronic Data Processing Programs Used in Agricultural Extension (Preliminary update); (2) Extension's Use of Electronic Communication and Computers in Technology Transfer; (3) Presentation to Secretary Lyng Relating to Green Thumb and Other Computer Technology; (4) Extension's Videotex Systems; (5) Computers and Electronic Communication.

- Concerns discussed in the National Extension Committee on January 12 included: (1) How can we utilize computers most effectively and insure that we have appropriate software? (2) How can we assure that each county office will have a computer? (3) A new "breed" of specialist, willing to plug information into this type of format is needed. (4) A philosophical base is needed so that an integrated approach is achieved with technicians, industry, users, and management. (5) Users must benefit in order for computer efforts to be successful.

c. A Study on the Transfer of Agricultural Food and Related Technologies - Dan Moore, Pennsylvania State University

Highlights

- This study, under USDA contract with Pennsylvania State, will investigate the transfer of technology in agriculture and food and related industries. Irwin Feller serves as principle investigator.

- This decentralized, productive system carries many mystiques--how does it work, and how can we tell others about it? What is the incentive for research, how is it transferred, how is it used, and what is the impact of that use? Does the system need more coordination and how can it work better?

- Steps taken in the study will include: (1) a document-based review of existing literature on technology transfer and the organizations involved; (2) study of linkages among those organizations; (3) review of existing case studies; (4) ten case studies of technologies which will help to illuminate linkages among organizations.

- Many technology transfer studies to date deal with formal, statutory linkages between organizations. This study will focus on informal linkages and how things really happen.

- Candidate technologies for study include: integrated pest management (cotton); mechanical deboning (poultry); mechanical

harvesting with genetic manipulation (apples, tomatoes); drip and trickle irrigation; conservation tillage; hay balers; lean beef; mastitis control; estrus synchronization (beef); grain sorghum; organic wastes as soil conditioners; automated egg production; artificial insemination.

- Technologies are from a variety of origin points and are relatively late in the stage of diffusion.

- Questions that will be asked in examining the 10 case studies will include: (1) conditions leading to the initiation of the innovation; (2) roles of actors and users in the invention and re-invention process; (3) interaction of public and private sector; (4) structure processes and programs linking actors within each step of the innovation process; (5) structure, processes, and programs linking actors within dimensions of the diffusion process; (6) characteristics of the innovation and how it changes during the diffusion process; (7) how is it facilitated or impeded; (8) consequences of innovation as perceived by actors; (9) estimates of future transfer of the technology.

- Studies will take place in five States and the target completion date is September 1983.

- A primary objective of the study is to help Government and universities to see how organizational linkages can be improved or established to speed technology transfer.

d. Technology Transfer and the Federal Laboratory - Terry Kinney, Administrator, Agricultural Research Service

Highlights

- The Technology Transfer process is complex and takes place at varying rates. Economic motivation may hasten technoloy transfer at an alarming rate, or it may take place in small increments over many years.

- The phrase "technology transfer" is loosely used. The term "technology" can mean the science of applying research results to the solution of practical problems or a technical method of achieving some practical purpose. The success of technology transfer is often determined by the severity of a problem in terms of effect on health or welfare, the cost of production, or other factors such as financial opportunities related to research findings.

- In 1978, President Carter called for a domestic review of industrial innovation. This resulted in a detailed study of the innovative process in U.S. industry. Recommendations made in this study were incorporated into Public Law 96-480 (Technology Innovation Act of 1980).

- The rate at which American agriculture has adapted to technological change is unparalleled in any major economic sector. The USDA has an effective system of using basic research findings of its scientists to develop technological improvements to be put to work almost immediately.

- Technology transfer from ARS should be, in part, through close linkages with the Extension Service. Linkages may weaken in large laboratories if extension people are not co-located with ARS scientists.

- Industry/ARS interaction is good at all levels. Communication takes place through joint research and development efforts and individual interpersonal contacts.

- ARS also transfers scientific technology to action and regulatory agencies in the USDA and elsewhere.

- Even though the USDA agricultural system is often studied as a model, improvements must be considered. For example, if ARS moves toward a primarily basic research organization, what major gaps will result in technology transfer and innovation? Will industry pick up basic research findings where ARS leaves off? Who will carry innovations through the "grey area" before they become economically profitable? What about transfer of information to and from non-agricultural groups?

- Perhaps a "focal point" for technology transfer should be designated within the system.

e. Research/Extension Linkages - James Anderson, Cochairman

Highlights

- The real purpose of both research and extension is to provide information to users who need it. Research/extension linkages must facilitate getting information to users and the flow of user needs back into the research system.

- The food and agriculture science and education system must be able to establish a united front to justify its importance to State

legislatures and the Congress. We must have a partnership rather than just a series of linkages. The clout of a university agricultural program is related to unity of teaching, research, and extension efforts. This is especially critical in times of shrinking budget resources and where legislatures are predominantly urban and labor dominated.

- Other critical elements which affect unification and coordination of programs in various States include: effectiveness of the teaching, research, and extension management teams; history of working relationships; nature of the reward system set up for research, extension, and teaching personnel.

- Research/extension coordination at the Federal level has begun only recently. Through the efforts of Dr. Bertrand, State/Federal trust has increased significantly. Ed Jaenke and the Council for Agricultural Research, Extension, and Teaching (CARET) assisted the system in increasing its timeliness and effectiveness of action at the Federal level.

- New systems for coordination between agriculture and other departments at the university level must be built as we pursue new areas like genetic engineering where potential payoff for agriculture is vast.

- As we look to the future, a strong partnership is needed. We will not be able to function effectively with as much independence of research, extension, teaching, and international efforts as we have in the past.

Discussion

Q. Can we meet all of these future challenges amidst shrinking budgets?

A. (Anderson) Additional cooperation and coordination between universities is needed--some universities may be more well equipped for specific challenges. We all tend to want to get involved in every exciting area. Also, we must find ways to excite the general public and the legislature about the potential benefits of increasing investment in research.

7. During the session, remarks of John Pino, chairman, Users Advisory Board were delivered by UAB Executive Secretary Barbara Fontana. Pino was unable to attend due to inclement weather. Remarks included the following:

- The United States is becoming a greater and greater supplier of world food needs. Whereas England was once the only major food importer, countries such as Argentina and South Africa, once food exporters, are food-deficit countries. This current situation is the result of increasing population, declining production, and expanding affluence. U.S. agriculture will be looked upon to provide increasing quantities of cereals and other agricultural products.

- There is no doubt that future gains in agricultural productivity must come from three areas: (a) increased input use of agricultural technology on croplands and pasture lands (despite concerns by the environmentalists, herbicide and pesticide application must increase worldwide); (b) development of input-based agriculture for areas such as river basins, coastal areas, low rainfall and flooded areas; (c) expansion of intensive agricultural production systems for the garden crops (closed system and multiple cropping).

- The implications of achieving future gains in agricultural productivity from those three areas produce three outcomes: (a) possible shifts in cropping patterns; (b) changes in the structure of land ownership; (c) rising costs of production which ultimately mean rising food costs.

- The rising cost of food products is a major concern of every country. In places where people already spend a major portion of their disposable income on food, rising costs will aggravate the situation of the poor.

- This scenario offers tremendous challenges to the science and education system to invigorate itself. In order for the science and education system to achieve immediate, intermediate, and ultimate goals we need a realistic projection of where we are going; a realistic assessment of our resources and how they are being used; a look at the institutions and structures of the agriculture system to determine if they need realignments of responsibilities, new tools and equipment.

- My fear is that when science and education is facing its greatest challenge, the greatest threat to sustain the vigor, imagination and responsiveness addressing these problems is at hand.

- Technology emanating from research and extension is the only known means to develop alternatives to high production costs and dangerous production inputs; to learn how to use and care for our resources; to protect the sustained productivity of those resources; and to enhance the productive

capacity of additional areas which must be brought into agricultural productivity.

- The Users Advisory Board, as it was first constructed, represented a wide spectrum of our citizenry. Nevertheless, that group uniformly gave high recognition to the importance of research and education in agriculture and has consistently given high priority to efforts to enhance productivity.

- The Board does, however, have some concerns. First, the research system should establish priority programs for the various levels of operation at the national, State and local level. Related to that is the need for an inventory across and within the agencies of the Federal Government. We need to know how much money and manpower are being used for identified practices. Finally, we have asked the science and education system to establish criteria to determine how much effort is enough and when the public sector role should phase out.

- Our concern with productivity concomitant with natural resource conservation sustains. We have expressed concern about our water resources, yet we feel, that as a nation, there is no cohesive approach to our water problem. We have and will continue to express concern about the organization and use of germplasm resources. The lack of continuity, purpose, direction, and coordination in international agriculture continues to draw the Board's attention.

- The UAB will be watching with interest as the Joint Council conducts the needs assessment and establishes a five-year plan and grapples with establishing budget and management recommendations for the priority program in research, extension, and teaching.

8. Report of the 1982 Agenda Committee

- R.J. Hildreth reported that the Agenda Committee, chaired by J.P. Jordan, met November 30 to identify issues for Joint Council attention in 1982.

- The Agenda Committee recommends that the 1982 Joint Council agenda focus on the Farm Bill-mandated needs assessment/strategic plan process and its associated implications for the food and agriculture science and education sector. The report outlines agenda suggestions for each of the 1982 quarterly Joint Council meetings.

- Other areas of emphasis suggested by the committee included: (a) better communication with the Secretary; (b) agricultural marketing systems; (c) soil and water conservation; (d) the relationship of water to agricultural productivity; (e) agricultural technology transfer; (f) human

expertise development; (g) credit; (h) international markets; and (i) budgets.

- A suggested theme for 1982 is "Planning Today for a Productive Tomorrow."

- The Council decided to vote on acceptance of the Agenda Committee report following the needs assessment/strategic planning process presentation.

9. The Science and Education System: Progress, Policy Issues, and Challenges Ahead

A. Science and Education: A Status Report

Note--due to inclement weather, Dr. Bertrand's comments were not delivered during the Council meeting. (See attachment to this report for summary.) Instead, John Stovall, Executive Director, made comments on the topic:

- Stovall discussed the proposition that there is, in fact, a "system" of science and education, noting that the actions of any one component impact on others, and that the success of one (e.g., extension) is dependent on another (e.g., research). There are issues facing the system that can best be addressed collectively.

- He challenged the Council to identify collective actions which the components of the science and education system could take in the coming year.

- The economic and political environment is important to recognize in developing strategies to deal with these issues. The Council will need to be increasingly sensitive to them. With current budget pressures (especially for reduction in Federal spending), the system will probably be under even more serious attacks. An offensive posture might be the most effective strategy in these times of increasing criticism.

- Issues we face collectively include:

  (1) Is our information base adequate to communicate to our critics, supporters, Congress, OMB, the State legislators about the size and scope of our programs?

  (2) How much planning and coordination is enough in the system? If more is needed, what is it the partners need to do?

  (3) What is the role of the USDA in the system? What role will the new USDA Assistant Secretary position play in the system?

(4) How can we increase public understanding of the system and its accomplishments?

(5) How can linkages between components of the system be better "nourished"?

- If these are issues, what role can the Joint Council play in helping to deal with them? Can the Joint Council take a position on policy issues on behalf of the science and education system?

- Our most important immediate challenge is the needs assessment/ strategic plan. We need a well-articulated rationale for our programs!

- We need to develop an effective relationship with the Office of the Secretary.

- Perhaps the Council should select one or two high priority areas where there is a need for additional planning and coordination, and attend to linkages that may be in disrepair.

B. Committees on Organization and Policy - Policy Issues and Challanges

(1) Resident Instruction Committee on Organization and Policy (RICOP) - Ted Hartung, Chairman

- Although the Morrill Act established the institutions of higher education for transmission of knowledge in mechanical arts and agriculture, higher education is still not fully accepted as a full fledged partner in the system.

- The 1977 Farm Bill restated the role of USDA in higher education, and it was reinforced in the 1981 act. RICOP feels that the USDA and the Joint Council should show an aggressive position regarding this intent.

- Enrollments in university agriculture programs have dropped for the second year in a row. This is especially serious since we need to build agricultural expertise in order to prepare for food and fiber needs in the '80s.

- Immediate concerns of RICOP include: (a) the USDA must clearly identify the role of higher education in the food and agriculture science and education system; (b) a higher education information system must be developed and must interface with research and extension systems; (c) there must be a Federal budget commitment to

carry out the intent of Title XIV; (d) coordination efforts among research, extension, and teaching must continue.

- The 1984 RICOP budget request identifies the need for: (a) formula support; (b) reinstatement of Bankhead-Jones; (c) budget for an information system dealing with numbers of faculty and students, and with budget figures; (d) modern instructional laboratories; (e) increasing human expertise replacement capacity.

- RICOP hopes to be fully involved in the Council's needs assessment/strategic plan process.

(2) Experiment Station Committee on Organization and Policy (ESCOP) - Mark Buchanan, Director-at-Large, Western Agricultural Experiment Stations

- ESCOP's major policy activity in 1980-81 has been to support the development of the 1981 Farm Bill.

- ESCOP supported the establishment of the position of USDA Assistant Secretary for Research, Extension, and Teaching, and provided a set of selection criteria to the Secretary for consideration.

- ESCOP also encouraged emphasis in Title XIV on the assets of the decentralized partnership in the U.S. food and agricultural sciences.

- ESCOP wishes to participate fully in the needs assessment and encourages the Council to consider a symposium on open systems planning in preparation for the assessment process.

- ESCOP feels that a stronger role should be played by the Joint Council in bringing about increased coordination--especially related to budget development.

- Someone must be in a position to speak for the entire system on selected policy issues and bring about action in a collective manner. ESCOP wants to see a Joint Council with increased clout.

(3) Extension Committee on Organization and Policy (ECOP) - John Gerwig

- The "Extension in the '80s" Committee, the task force on computers, and the Evaluation and Accountability Task Force are important extension efforts for 1982.

- Congressional oversight hearings on extension will be held in March. Issues will include: (a) Where will extension place its resources in the future? (b) Who will constitute extension clientele? (c) What will be the research base? (d) What is the role of ES-USDA?

- The Council for Agricultural Research, Extension, and Teaching (CARET) group will be broadened to represent teaching, research, and extension.

- Priority agricultural issues in extension for 1981 include: water, energy, interest rates, and erosion.

C. Discussion with Richard Lyng, Deputy Secretary - Policy Issues in Science and Education

- Lyng thanked the Joint Council for its efforts and complimented partners in the Council on accomplishments to date.

- Science and Education interests are represented in the 1983 budget, but in times of inflation, allocations probably do not represent real growth.

- The 1981 Farm Bill reaffirms the Joint Council's role, with minor modifications, and establishes the position of USDA Assistant Secretary for Science and Education. Confirmation of an Assistant Secretary will most likely be a lengthy process.

- This Administration hopes to improve basic agricultural research and basic scientific understanding. Mission-related research must continue, but practical research that could be picked up by other organizations will be dropped.

- The new tax laws will hopefully set the stage for additional private research and development.

Discussion

Q. (Gerwig) This Administration's support for extension is appreciated. An immediate challenge to extension is the acceleration of technology transfer. The computer is seen as an important tool in accomplishing this.

A. (Lyng) It will be difficult for extension to keep up with farmers in the rapidly changing computer area. Possibly extension should look into very sophisticated uses of computers, i.e., more rapid

transmission of crop reports from Washington to farmers and other users.

Q. (Hildreth) Under provisions in the new 1981 Farm Bill, what are our opportunities to be of assistance to the Secretary and his office?

A. (Lyng) Your assistance will be needed in decisionmaking as we proceed to make difficult choices in the future. The Joint Council can bring together the viewpoints of agricultural leaders in research and education. What is the justification for expenditure of taxpayers' dollars in this area? I think it is the improvement of agricultural productivity in the broadest sense.

Q. (Robinson) The new Farm Bill identifies a stronger role for the Joint Council in the area of budget and program management.

A. (Lyng) A group like the Joint Council cannot develop the USDA budget, but can give recommendations about where budgetary emphasis is needed. Research and education is not a very controversial area right now--it's easier to give this area a high priority for a relatively small amount of money.

Q. (Hildreth) What will the responsibilities of the new USDA Assistant Secretary for Science and Education include?

A. (Lyng) This person will be the top science and education manager and will report directly to the Secretary.

Q. (Hartung) There is a great need for trained top quality scientists particularly with increased emphasis on basic research. In the budget process, it is hoped that human expertise development for agriculture is clearly identified.

A. (Lyng) The Joint Council could point out economic benefits of certain agricultural professions in the future. Perhaps we will have to try to make sure professors get paid more.

Q. (Anderson) What should science and education do to help the economic plight of farmers?

A. (Lyng) Perhaps in these times of low farm prices and high interest rates, extension should help farmers look at costs of production. Farmers in the high one-third are in jeopardy!

10. Common Program Structure Update

- John Stovall reported the following progress in implementing the common program structure adopted by the Council in July.
  - Designation of a science and education follow-up staff group.
  - Correspondence to ESCOP, ECOP, RICOP, ASCUFRO chairmen regarding implementation.
  - Work with existing data base staffs to crosswalk data bases into the common program structure.
  - Use of common program structure in 1983 science and education budget development process.
- Joint Council commendation has been sent to the Program Structure Study Group and staff group for a job well done.

11. USDA Agency Updates

A. Agriculture Research Service

- Terry Kinney, Acting Administrator, Agricultural Research Service (ARS), reviewed a draft of the revised ARS mission statement and updated the Council on progress in development of a strategic and operational plan for ARS.
- Steve Rawlins, ARS National Program Staff, said that the strategic plan will describe where ARS is headed in terms meaningful to Congress and the public.
- Elements of the strategic plan will include:

  (1) Program strategy - ARS goals, objectives, and research approaches and projects to meet those goals.

  (2) Implementation strategy - general policy guidelines for implementing and managing the national program, and a six-year forward plan. The six-year forward plan is organized by the five objectives adopted in the strategic plan. Resource projections cite estimates of major resource needs to implement the plan.
- Elements of the operational plan will include:

  (1) Program operating procedures - operating details relevant to the broad policies of the implementation strategy.

(2) Scientific research programs - existing research programs which will be continued and new programs that will be established as necessary to achieve the objective of the strategic plan.

- Target date for completion of the strategic plan is March 1, 1982. At that point, development of the operational plan will begin. Target date for completion of the operational plan is September.

Discussion

Q. How does this effort correlate with the needs assessment/strategic planning activities of the Joint Council?

A. ARS does not stand alone--it is part of the system. As the Joint Council material develops, the two strategic plans will be merged to the greatest extent possible. As the Joint Council makes program priority decisions related to budget, the process will be complex.

Q. How will the ARS plan account for projects that may potentially be closed down under this Administration? Will the decisions be only political, or will ARS have input?

A. This plan as presented today represents ARS input only. Science and education agencies were asked, however, by the current Administration to identify programs that would be cut under a potential 20 percent budget reduction. Richard Lyng is reviewing those cuts and their implications with Dr. Kinney in detail.

Q. How will ARS provide for redirection of expertise development?

A. In a large organization, it is easier to move a highly trained scientist to a new project.

Concluding Remarks

- Strategic planning in a large decentralized system is exceedingly difficult. The Joint Council, however, remains in a unique position to consolidate who is to do what in the system and what it will cost.

B. Cooperative State Research Service

- Walt Thomas, Acting Administrator, Cooperative State Research Service (CSRS), reported that the CSRS progam review process has been somewhat slowed due to budget restrictions.

- A program analysis and evaluation staff has been formed in CSRS including Eldon Weeks, Jane Roth, and Yao-Chi Lu.

- Thomas noted the important role played by experiment stations in researching agricultural problems that have eventually become national priorities.

- Thomas sees the role of the competitive grant programs as a supplement, not a substitute, for traditional research funding. He regrets that use of funds is tightly prescribed by Congress and would like to see competitive grants expanded to include basic research on animal science and environmental, in addition to biological stress.

C. Extension Service

- Denzil Clegg, Associate Administrator, Extension Service, reported that several ongoing extension efforts will be relevant to the Council's needs assessment and strategic plan:

  - Output of the "Extension in the '80s" Committee which is examining extension's role, scope, and mission.

  - The congressional oversight hearings (March).

  - Extension's Evaluation and Accountability Task Force (Federal and State membership) which is leading to a new four-year planning cycle for extension.

D. Forest Service - Robert Buckman, Deputy Chief for Research

- This Administration places emphasis on commodity production, minerals, and fossil fuels. This shift in emphasis is visible in Forest Service budgets.

- In FY 82, Forest Service Research will have 5 percent fewer dollars with no accommodation for inflation.

- The 61 forestry schools and the Forest Service have completed a printed update of the long-range research program.

- A joint Department of Agriculture-Department of the Interior research coordinating committee has been established. Nine agencies responsible for research and extension programs in renewable natural resources are represented. Areas of work for the committee this year include: (1) joint review of budget planning in the various agencies; (2) improved access to other data bases; (3) joint participation in

field reviews; (4) exploration of opportunities for co-location; (6) a mechanism to stimulate joint planning of research of common interest.

E. National Agricultural Library - Sam Waters, Associate Administrator, National Agricultural Library

- The NAL is formulating a long-range strategic plan to articulate the role of the NAL in meeting information needs of the Federal and State teaching, research, and extension system. A study team is being assembled to determine future strategies for the library.

- NAL also plans to participate in the Joint Council's strategic planning process.

Discussion

Q. What is the role of NAL in filling information voids created by publication limitations?

A. A variety of technological advances at the NAL is moving in this direction, i.e., NAL will serve as a receiving station for a teleconference on library and information services; many reference materials, etc., are accessible by computer. Costs of new technology are a limiting factor amidst shrinking budgets.

F. Inventory of Federal Science and Education Programs - Ernie Corley, Chief, Science and Education Coordinating Office

- In line with the coordinating responsibilities of the USDA Assistant Secretary for Science and Education, an inventory was undertaken to increase understanding of systemwide food and agriculture science and education programs.

- This initial segment of the study shows expenditures of 36 Federal agencies outside the USDA for science and education-related programs.

- Percentages of total expenditure spent for teaching, research, and extension efforts are cited.

- Expenditures are also classified by categories of the common program structure, i.e., percentages of research and extension funding for natural resources; production and protection; processing, marketing, and distribution; people and communities.

- The inventory will be submitted to Dr. Bertrand pending final verification of data.

- A similar inventory will be done for USDA agencies engaged in science and education activities.

- Data from universities and/or private industry could be gathered if requested by the Joint Council.

12. Update: Interagency Committee on Acid Precipitation

- Cochairman Bertrand reported that work of the national task force, tri-chaired by USDA, the Department of Commerce, and the Environmental Protection Agency, continues.

- Office of Management and Budget has taken a strong interest in this area and has earmarked a specific amount for acid precipitation research. One-third of the USDA allocation has been designated for research in science and education agencies and two-thirds for Forest Service research.

- Dialogue with the Canadians continues and the U.S. is under pressure to control emissions. Research is inadequate, however, to support regulation of industry.

- Technical representatives on the national task force are working to define what should be done, by whom, and how much it will cost.

13. Implementations of Title XIV - Needs Assessment/Five-Year Plan

- Bob Buckman reported that the staff work group which he chairs has further developed methodologies for completion of the needs assessment and additional Joint Council reports called for in the 1981 Farm Bill. (Since the October meeting, the Secretary has officially designated the Joint Council to be responsible for the needs assessment.)

- Keith Shea reviewed specific reporting requirements per 1981 Farm Bill legislation: (a) long-term needs assessment due January 1, 1984; (b) recommendations of priorities for research, extension, and teaching--annually on June 30; (c) progress of research, extension, and teaching; and future expectations--annually on November 30; (d) five-year plan for food and agricultural sciences in research, extension, and teaching--June 30, 1983. (Plan updated every two years.)

- Shea reviewed that the GAO, in its report "Long-Range Planning Can Improve the Efficiency of Agricultural Research and Development," challenged the U.S. food and agriculture research and education community to devise a long-range plan that would do the following: address itself to a 5-50 year time frame; identify long-term issues that require timely decisions;

develop national social, political, and economic goals in light of anticipated domestic and international developments; rank goals and possible courses of action; assess risks; devise interdependent strategies; and develop contingency plans for emergencies.

- As a first step toward a long-term plan, Title XIV requires a needs assessment for food, fiber and forest products. According to work group plans, the assessment would be broad in scope, be primarily a synthesis of existing data (previously completed and ongoing priority-setting studies), and contain 10-15 major long-range challenges ("scenarios") for the food and agriculture science and education system. The report would follow the common program structure, be 50 pages in length, and would provide long-term goals as basis for a five-year plan. The audience for the assessment includes the science and education community, Congress, the Administration, and the lay public.

- The Council's five-year plan will develop from the needs assessment, be based on interaction with the science and education community, and organized by categories of the common program structure. It will include a statement of long-range strategies to meet needs for food, fiber, forest and range products; and a statement of goals (measurable) to be accomplished by the food and agricultural science and education system in a five-year increment, with suggested resource allocations.

- The annual priorities report will relate to goals outlined in the five-year plan with input from the Joint Council, its subcommittees, and other groups. It will delineate programs and priorities for the next one-three years, with recommendations on levels of financial, manpower, and other support. The report will be organized by categories of the common program structure and approximately 20 pages in length.

- The annual accomplishments report will cite food and agriculture science and education yearly accomplishments that relate to goals stated in the five-year plan and annual priorities report.

- Preparation of all four reports will be concurrent and accomplished by a core staff of four outstanding persons.

- Consultation and review will be sought from the Joint Council national committees and regional councils; ECOP, ESCOP, RICOP, ASCUFRO; the Users Advisory Board; 1890 Schools; home economics; veterinary medicine; OMB; OSTP; AASCU; OBPA, and other Federal agencies.

- Bob Marshak tracked theoretical "scenarios" from the needs assessment process to the five-year plan and the annual priorities report.

- Sample Scenario: The natural resource base needed by agriculture will face strong competing demands from other sectors.

Needs Assessment : (states challenge)	The challenge to the system is to maintain the natural resource base needed for sustained agricultural production.
Five-Year Plan : (shows five-year response)	Research will develop means to upgrade productivity of marginal lands through soil, water, and plant breeding programs.
	Extension will develop means to upgrade productivity of marginal lands through soil, water, and plant breeding programs.
	Higher Education will graduate more Ph. D.s in the relevant disciplines.
Priorities Report: (plans for next one-three years)	Research will increase effort on nitrogen-fixation basic research.
	Extension will develop an expanded national program in soil conservation technologies and practices.
	Higher Education will give grants for fellowships in relevant disciplines.

Discussion Points

- We must identify research and extension's ability to respond to unpredictable crises as a crucial element of the U.S. food and agriculture science and education system.
- In synthesizing previously completed priority-setting studies, we must recognize and account for "moving targets," i.e., reports may have internal inconsistencies and changes with time.
- The Council must have input in deciding which 10-15 major "scenarios" will be used to describe future needs in agriculture.
- Should scenarios be limited to fewer than 10-15 so that the content of this report can be easily recalled?
- Influential persons, i.e., potential "sponsors" in the Congress and the Administration should be brought in as soon as possible. This series of

reports represents a great opportunity for the agricultural community to take the "offensive" and provide persuasive data to the Congress and the Secretary.

- Additional USDA staff resource persons with expertise in the assessment/planning areas should be added to the staff work group.

- Perhaps the assessment/plan process could be funded through funds earmarked for science and education evaluation studies ($1 million total funding).

- Does the plan for this series of reports respond effectively to criticisms about the lack of long-range planning in the food and agricultural sciences? It appears to address only five-year planning.

- A major conclusion of the needs assessment should be that a decentralized, open system of planning must be kept in place so that unforeseen problems in agriculture can be effectively met by the food and agriculture science and education system. In line with this, the Agenda Committee suggested holding a Joint Council symposium on open systems planning. Will this be done?

- If the annual priorities report (due June 30) could be well along in preparation by the previous January, USDA budget decisions could be more effectively influenced.

- As this proposed reporting process unfolds, the Council could choose several priority issues and submit concise one-two page briefing papers on each to the Secretary of Agriculture with systemwide recommendations.

- Teaching, research, and extension must all be represented on the committee which will spearhead this effort (composition subsequently decided upon includes Robert Buckman, Forest Service; Mark Buchanan, Director-at- Large, Western Agricultural Experiment Stations; Craig Oliver, Director, Maryland Extension Service; Allan Goecker, Assistant Director for Higher Education, Science and Education. This implementation committee will report to the Executive Committee.

- The Joint Council and its regional councils and national committees must be effectively involved in the priority-setting process for these reports. Understanding of the process must be increased among stateside partners.

- Congressional staff that was active in drafting the 1981 Farm Bill and staff from the Office of Budget Planning and Analysis should be invited to the April Council meeting.

Motions

- It was moved and seconded and passed that the general plan for the assessment and plan, as presented, be adopted by the Council and that the Executive Committee move ahead with implementation.

- Moved, seconded, and passed that the Joint Council partners make a strong commitment to this process and to answering the difficult priority-setting questions that it will entail.

14. Acceptance of Agenda Committee Report

- The Council voted to accept the report of the Agenda Committee.

15. National Extension Committee: Concluding Comments

- Bud Amburn, chairman, NEC, suggested that the Council direct the NEC to work with the ECOP task force on computers as well as ESCOP and RICOP to investigate the potential for a National Computer Institute to be operated by the most efficient means possible.

- So moved and passed.